Section Number :	2
Mandatory or Optional :	Mandatory
Number of Questions :	25
Section Marks :	25
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Is Section Default? :	null

Question Number : 51 Question Id : 2106888257 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

$N\ Kg^{-1}$ is the unit of

Options :

1. ✖ Velocity

2. ✔ Acceleration

3. ✖ Force

4. ✖ Momentum

Question Number : 52 Question Id : 2106888258 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A system has basic dimensions as density 'D', velocity 'V' and area 'A'. The dimensional representation of force in this system is

Options :

1. ✔ $A V^2 D$

2. ✖ $A V D^2$

3. ✖ $A^2 V D$

4. ✖ $A^0 V^2 D$

Question Number : 53 Question Id : 2106888259 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If The magnitude of vectors **A**, **B** and **C** are 5, 4 and 3 units respectively and **A** = **B** + **C**, then the angle between vectors **A** and **C** is

Options :

1. ✖ $Cos^{-1}(4/5)$

2. ✖ Π

3. ✔ $Cos^{-1}(3/5)$

4. ✖ $Sin^{-1}(3/4)$

Question Number : 54 Question Id : 2106888260 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the sum of two unit vectors is also a unit vector, then the magnitude of their difference is

Options :

1. ✖ 1

2. ✖ $1/2$

3. ✖ $1/\sqrt{2}$

4. ✔ $\sqrt{3}$

Question Number : 55 Question Id : 2106888261 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A particle starting from rest moves in a straight line with uniform acceleration a. The average velocity of the particle in first 's' distance is

Options :

1. ✔ $\sqrt{\frac{as}{2}}$

2. ✖ $\sqrt{\frac{3as}{2}}$

3. ✖ $\sqrt{2as}$

4. ✖ as

Question Number : 56 Question Id : 2106888262 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A projectile is thrown with speed **u** making angle θ with the horizontal at t = 0. It just crosses two points of equal height at time t = 1s and t = 3s respectively. The maximum height attained by the projectile is (take $g = 10\ ms^{-2}$)

Options :

1. ✖ 10m

2. ✔ 20m

3. ✖ 15m

4. ✖ 22m

Question Number : 57 Question Id : 2106888263 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A body is falling from height 'H' takes time 'T' seconds to reach the ground. The time taken to cover the first half of height is

Options :

1. ✔

$\frac{T}{\sqrt{2}}$

2. ✖ $\sqrt{2}\,T$

3. ✖ $\sqrt{3}\,T$

4. ✖ $\frac{T}{\sqrt{3}}$

Question Number : 58 Question Id : 2106888264 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A body sliding on ice with a velocity 8 ms^{-1} comes to rest after travelling 40 m. The coefficient of friction between the body and ice is ($g = 10\ ms^{-2}$)

Options :

1. ✖ 0.02

2. ✖ 0.05

3. ✔ 0.08

4. ✖ 0.2

Question Number : 59 Question Id : 2106888265 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If a body placed on a rough inclined plane of gradient 1 in 4, just begins to slide, then coefficient of friction between the plane and body is

Options :

1. ✖ $\frac{2}{\sqrt{15}}$

2. ✖ $\frac{1}{\sqrt{2}}$

3. ✖ $\frac{1}{\sqrt{5}}$

4. ✔ $\frac{1}{\sqrt{15}}$

Question Number : 60 Question Id : 2106888266 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A cube of 10 N weight rests on a rough inclined plane of slope 3 in 5. If the coefficient of friction between plane and cube is 0.6, then minimum force required to start the cube moving up the plane is

Options :

1. ✖ 2N

2.

✖ 6N

3. ✔ 10.8N

4. ✖ 4.5N

Question Number : 61 Question Id : 2106888267 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A pump can take out 7200 Kg of water per hour from a 100 m deep well. If the efficiency of the pump is 50% then power of the pump is ($g = 10\ ms^{-2}$)

Options :

1. ✖ 2 KW

2. ✔ 4 KW

3. ✖ 7.2 KW

4. ✖ 3.6 KW

Question Number : 62 Question Id : 2106888268 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

When a force $\mathbf{F} = \mathbf{i} + 2\mathbf{j} + 3\mathbf{k}$ acts on a body to move it from $\mathbf{r}_1 = \mathbf{i} + \mathbf{j} + \mathbf{k}$ to $\mathbf{r}_2 = \mathbf{i} - \mathbf{j} + 2\mathbf{k}$, then the work done by the force is

Options :

1. ✖ -3 J

2. ✔ -1 J

3. ✖ 2 J

4. ✖ 3 J

Question Number : 63 Question Id : 2106888269 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The K.E. of a body moving with a speed of 10 m/s is 30 J. If its speed becomes 30 m/s, then its K.E. will be

Options :

1. ✖ 10 J

2. ✖ 90 J

3. ✖ 180 J

4. ✔ 270 J

Question Number : 64 Question Id : 2106888270 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The maximum speed of a particle executing SHM is 1 m/s and maximum acceleration is 1.57 m/s^2. Its time period is

Options :

1. ✔ 4 sec

2. ✖ 1.57 sec

3. ✖ 2 sec

4. ✖ $\frac{1}{1.57}$

Question Number : 65 Question Id : 2106888271 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A girl is swinging on a swing in the sitting position. If the girl stands up, the time period of the string will

Options :

1. ✖ Increase

2. ✔

Decrease

3. ✖ Remains same

4. ✖ Becomes erratic

Question Number : 66 Question Id : 2106888272 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

A light spring supports 200 gm weight at its lower end; it oscillates with a period of 1 sec. How much weight must be removed from the lower end to reduce the period to 0.5 sec?

Options :

1. ✖ 100 gm.

2. ✖ 50 gm.

3. ✔ 150 gm.

4. ✖ 200 gm.

Question Number : 67 Question Id : 2106888273 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The velocity of sound in any medium depends upon

Options :

1. ✖ Intensity and elasticity

2. ✖ Amplitude and density

3. ✔ elasticity and density

4. ✖ Amplitude and elasticity

Question Number : 68 Question Id : 2106888274 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The beat frequency produced by the vibrations of $x_1 = A \sin(320\pi t)$ and $x_2 = A \sin(326\pi t)$ is

Options :

1. ✖ 6

2. ✖ 4

3. ✖ 2

4. ✔ 3

Question Number : 69 Question Id : 2106888275 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The Boyle's law is stated by PV = C, C depends on

Options :

1. ✖ Nature of gas

2. ✖ Atomic weight of gas

3. ✖ Temperature of gas

4. ✔ Quantity and temperature of gas

Question Number : 70 Question Id : 2106888276 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The equation of state for 5g of oxygen(O_2) at pressure P and temperature T, when occupying a volume V, will be (R is universal gas constant)

Options :

1. ✖ $PV = 5RT$

2. ✖ $PV = \frac{5}{2} RT$

3. ✖

$PV = \frac{5}{16} RT$

4. ✔ $PV = \frac{5}{32} RT$

Question Number : 71 Question Id : 2106888277 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

The volume of a gas at constant pressure of 10^3 N/m^2 expands by 0.25m^3. The work done in this process is

Options :

1. ✖ 25J

2. ✖ 50J

3. ✔ 250J

4. ✖ 5J

Question Number : 72 Question Id : 2106888278 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

For an adiabatic expansion of a perfect gas the value of $\frac{\Delta P}{P}$ is equal to

Options :

1. ✖

$\frac{\Delta V}{V}$

2. ✖ $\gamma \frac{\Delta V}{V}$

3. ✔ $-\gamma \frac{\Delta V}{V}$

4. ✖ $\gamma - \frac{\Delta V}{V}$

Question Number : 73 Question Id : 2106888279 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

First law of Thermodynamics is a special case of

Options :

1. ✖ Boyle's law

2. ✖ Charles law

3. ✖ Law of conservation of mass

4. ✔ Law of conservation of energy

Question Number : 74 Question Id : 2106888280 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

If the critical angle for total internal reflection from a medium to vacuum is 30°, the velocity of light in the medium is

Options :

1. ✖ 3×10^8 m/s

2. ✔ 1.5×10^8 m/s

3. ✖ $\sqrt{3} \times 10^8$ m/s

4. ✖ 2×10^8 m/s

Question Number : 75 Question Id : 2106888281 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Light rays of wave length 4.36×10^{-7} m incident on a metal surface of work function 1.24 eV. The stopping potential required to stop the emission of photoelectrons is

Options :

1. ✔ 1.6 eV

2. ✖ 1.24 eV

3. ✖ 3.2 eV

4. ✖ 4.8 eV

Chemistry

Section Id :	210688164
Section Number :	3
Mandatory or Optional :	Mandatory
Number of Questions :	25
Section Marks :	25
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Is Section Default? :	null

Question Number : 76 Question Id : 2106888282 Display Question Number : Yes Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

According to Bohr`s theory of hydrogen atom, the angular momentum of electron in fourth orbit of H-atom is equal to

Options :

1. ✖ $\frac{h}{2\pi}$